

## **REMARKS**

### **I. Claim Rejection - 35 USC § 112, 2nd Paragraph**

Examiner rejects claims 52-57 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Examiner asserts that:

1. the limitation "the ratio of energy in the panel with the second greatest energy" does not have proper antecedent basis for the phrase "the ratio"
2. it is unclear whether said "first test" is a ratio test, a comparison to a threshold, or both and requests that applicant clarify this point,
3. while the claims do recite "computing the energy" in each panel, there is no step directed to computing a "ratio" of anything,
4. it is unclear whether said "second test" is a ratio test, a comparison to a threshold, or both,
5. while the parent claims 52 and 55 do recite "determining the minima and maxima of the signal", these claims do not recite "intensity values." Therefore, there is lack of antecedent basis for this limitation.
6. claim 57 recites the limitation "the summing the square of the signal." There is lack of antecedent basis for this limitation.

The claims have been amended to address these concerns and Applicant respectfully requests that the rejection be removed.

Point 1 above has been addressed by amending the claims to include the phrases "performing a first test by computing a first ratio", and "performing a second test by computing a second ratio," thereby providing proper antecedent basis.

Point 2 above has been addressed by defining the first test as comparing a first ratio to a first threshold and declaring that the test is passed if the first ratio exceeds the first threshold.

Point 3 above has been addressed by amending to define a step for calculating a ratio of energy values.

Point 4 above has been addressed defining the second test as comparing a second ratio to a second threshold and declaring that the test is passed if the second ratio exceeds the second threshold.

With regard to point 5, applicant contends that antecedent basis does exist for the term "intensity values," as the existing claims contain the limitation "data wherein the data represents intensity and nucleic acid fragment length information," however applicant has amended the claims to use the term "intensity value" consistently throughout the claims in order to subvert any confusion.

Point 6 has been addressed by amending to provide antecedent basis for "summing of squares."

## **II. Claim Rejections - 35 USC § 102**

Examiner rejects claims 52-57 under 35 USC § 102 (b) as being anticipated by Ng (Automating Computation Molecular Genetics, Thesis Dissertation, Carnegie Mellon University, School of Computer Science, 1998, Abstract and p. 32, 142-148, and 279).

Examiner asserts that Ng's "reducing [the] signal into discrete marker bands binned with integers sizes, [which] is an implicit teaching for dividing the signal into "panels" based on signal maxima and minima [p.32, Section 3.2 and Fig. 3.3], as in claims 52 and 55."

Applicant traverses this assertion. Ng's "marker bands" are not based on maxima and minima. The marker bands are based on first determining the center of the each marker from the sizing grid and then defining the width of the marker band. These marker bands are next overlaid on the intensity/fragment length data. Applicants "panels" are defined via the minima and maxima of a secondary signal created from the intensity/fragment length data. Thus, Ng's marker bands are not the same as Applicant's panels and cannot provide an implicit teaching for Applicant's panels. Regardless, Applicant has amended the claims to include the limitation "signal envelop." This term

more clearly identifies the type of signal being divided into panels. Support for this term can be found in at least paragraph 237 of the published application. With this distinction, Examiner's other point regarding Ng's teaching of a sum of squares does not apply as the underlying signal (among other things) that is formed as part of the claim limitations (the signal envelope) distinguishes the instant Application from Ng.

Applicant respectfully requests that the rejection be removed.

### **III. Claim Rejection – 35 USC § 103**

Examiner rejects claims 52-57 as anticipated by Perlin (US 6,807,490) in view of ABI PRISM Genotyper 2.5 User's Manual (PE Biosystems, Copyright 1998, p.1-354).

Examiner contends that Figure 6 clearly shows windows between signal maxima and minima. Applicant respectfully disagrees. The vertical lines in Figure 6 show positions identified by the sizing ladder. Examiner finds support for his contention in Col 24, lines 19-29, however, this section makes absolutely no reference to division by minima and maxima. It only references the allelic size ladder. Because of this, Perlin is not "indeed a teaching for windowing based on the calculation of local maxima and minima, as required by the instant claims." Also neither Figure 5, nor Figure 6, nor Figure 7, nor Col 29, lines 60-69 provide support for Examiner's contention that Perlin teaches signal division by minima and maxima. All figures show vertical lines at ladder locations and Examiner has failed to show that these vertical lines are used for signal division into panels.

Examiner asserts that the allelic ladder windows equate to Applicant's panels. This cannot be the case because Perlin's allelic ladder windows are formed by taking known points from the allelic ladder and placing uniform sized bins on them in a process identical to Ng's. Applicant's panel are formed by operating on the signal envelope and using minima and maxima to define the size and position of the panels.

For the reasons stated above, Perlin cannot be used as a basis for a 35 USC 103(a) rejection and therefore Perlin in view of ABI PRISM Genotyper 2.5 User's Manual does not anticipate the instant application.

Applicant respectfully requests that the rejection be removed.

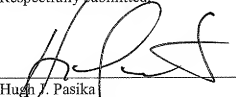
**REQUEST FOR TIME EXTENSION and FEE AUTHORIZATION**

A Petition for an Extension of Time under 37 CFR 1.136(a) is being filed with this response. Should any additional fees not submitted with this response be required, please take such fees from Applied Biosystems Deposit Account No. **01-2213 (Order No. 4615)**.

Date: \_\_\_\_\_

9/24/07

Respectfully submitted,



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